1861MNRAS..21...69.

Results of Meridional Observations of Small Planets; and Phenomena of Jupiter's Satellites; observed at the Royal Observatory, Greenwich, during the month of December, 1860.

(*Communicated by the Astronomer Royal.*)

Flora ⑧.

Mean Solar Time of Observation.		Apparent R.A.	Apparent N.P.D.
	h m s	h m s	° ′ ″
1860, Dec. 17	9 22 51·80	3 9 44·21	80 5 25·11
18	9 18 40·06	3 9 28·35	79 59 54·44

Psyche ⑯.

Mean Solar Time of Observation.		Apparent R.A.	Apparent N.P.D.
	h m s	h m s	° ′ ″
1860, Dec. 17	10 0 43·07	3 47 41·70	74 44 34·47
18	9 56 11·64	3 47 6·10	74 45 11·46

Massilia ⑳.

Mean Solar Time of Observation.		Apparent R.A.	Apparent N.P.D.
	h m s	h m s	° ′ ″
1860, Dec. 18	12 12 0·46	6 3 17·23	67 42 9·87
19	12 7 0·67	6 2 13·18	67 42 19·03
22	11 52 0·94	5 59 0·66	67 42 52·47

Euterpe ㉗.

Mean Solar Time of Observation.		Apparent R.A.	Apparent N.P.D.
	h m s	h m s	° ′ ″
1860, Dec. 5	7 34 20·41	0 33 36·30	88 29 48·58
6	7 30 54·23	0 34 6·12	88 25 15·89

Amphitrite ㉙.

Mean Solar Time of Observation.		Apparent R.A.	Apparent N.P.D.
	h m s	h m s	° ′ ″
1860, Dec. 8	9 31 44·57	2 43 9·42	65 1 52·08
18	8 48 22·98	2 39 6·30	65 33 46·62

No occultations of stars by the moon were observed during the month of December 1860.

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Occultations and Transits of Jupiter's Satellites.

Day of Observation. 1860.	Satellite.	Phenomenon.	Mean Solar Time. h m s	Observer.
Dec. 18	I.	Tr. egress	12 2 23·86	E.
18	IV.	Occ. disapp. first cont.	12 18 21·26	E.
18	IV.	,, central bis.	12 21 20·76	E.
18	IV.	,, last cont.	12 23 20·44	E.
18	IV.	Occ. reapp. first cont.	17 9 28·47	A. D.
18	IV.	,, central bis.	17 12 3·03	A. D.
18	IV.	,, last cont.	17 14 17·67	A. D.

The initials E. and A. D. are those of Mr. Ellis and Mr. Davis.

On the Lunar Theory. By Sir J. W. Lubbock, Bart.*

(Abstract.)

The memoir is chiefly occupied with the comparison and discussion of the numerical values of the coefficients of the several inequalities, as given by M. Plana and M. de Pontécoulant, and in the *American Tables*, Washington, 1853. It is shown what are the quantities which should be added to the longitudes and latitudes of the *American Tables* in order to obtain those which would be given by the coefficients of Pontécoulant, when quantities under 0″·3 are neglected; these corrections are so small that, practically, the places given by the *American Tables* may be considered as identical with the places which would be given by tables founded upon Pontécoulant's coefficients, and therefore by the theory of Lubbock and Pontécoulant. The author remarks:—"There is no error in M. Plana's analytical expression for the longitude in terms of the first, second, third, or fourth order. There are three errors of the fifth order, of which one is insensible. In M. Plana's analytical expression for the latitude there are no errors of the first, second, or third order, and only two of the fourth order. By carefully examining M. Plana's numerical reductions, M. de Pontécoulant and myself have succeeded in discovering the causes of the principal differences between M. Plana's coefficients and those of M. de Pontécoulant: there remain discrepancies in terms of the fifth and higher orders which it is very desirable should be got rid of. M. de Pontécoulant and myself, where we differ from M. Plana, went over our calculations so many times that we think the error can hardly be on our side; and unless M. Plana will revise

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* The Memoir, which was read at the Meeting in November last, will probably appear *in extenso* in the *Memoirs* of the Society.—Ed.

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